

3.5 Graphs of Tangent, Cotangent, Secant & Cosecant

Name _____ Date _____ Period _____

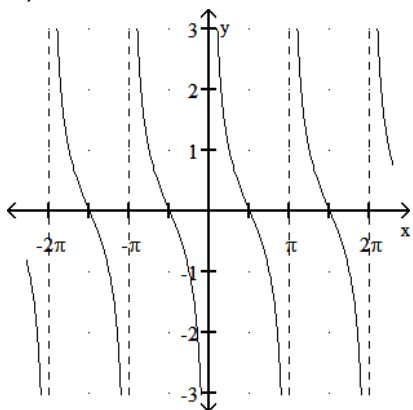
MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Match the function with its graph.

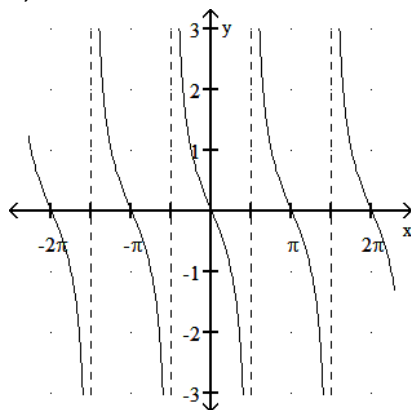
- 1) $y = \tan x$ 2) $y = \cot x$
 3) $y = -\tan x$ 4) $y = -\cot x$

1) _____

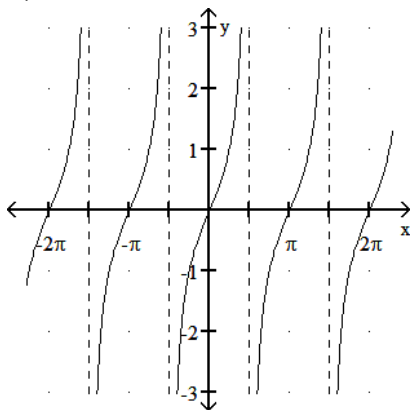
A)



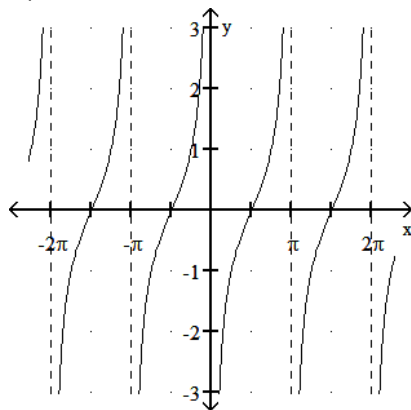
B)



C)



D)



A) 1C, 2A, 3B, 4D

B) 1B, 2D, 3C, 4A

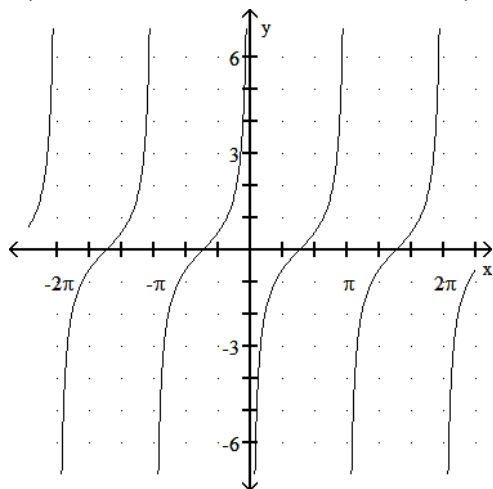
C) 1A, 2B, 3C, 4D

D) 1A, 2D, 3C, 4B

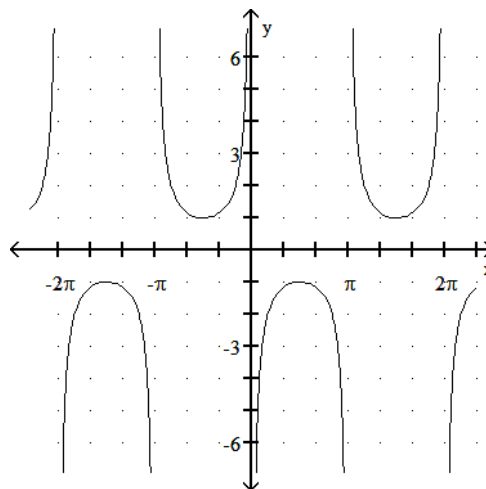
- 2) 1) $y = -\csc x$ 2) $y = -\sec x$
 3) $y = -\tan x$ 4) $y = -\cot x$

2) _____

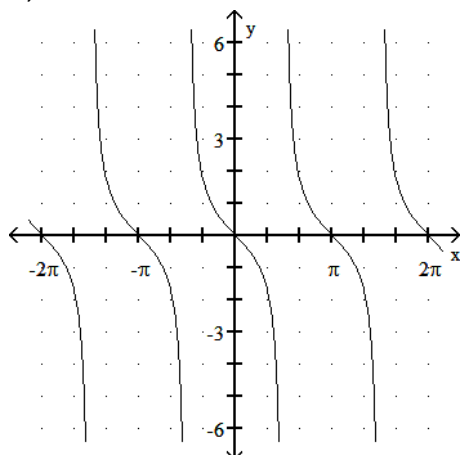
A)



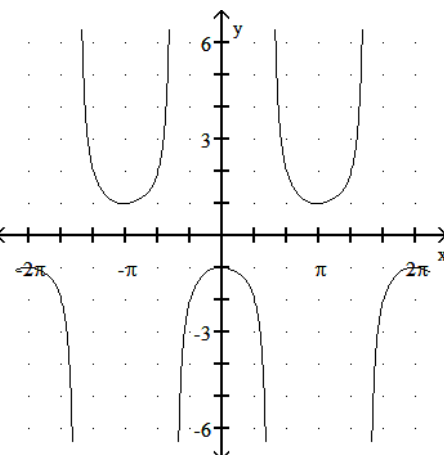
B)



C)



D)



A) 1B, 2D, 3C, 4A

B) 1A, 2B, 3C, 4D

C) 1C, 2A, 3B, 4D

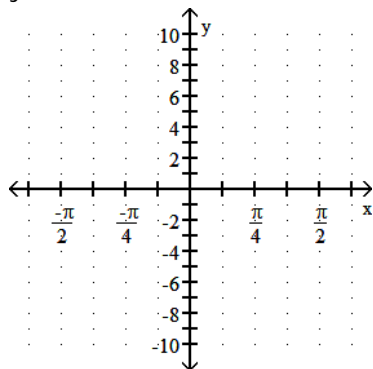
D) 1A, 2D, 3C, 4B

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

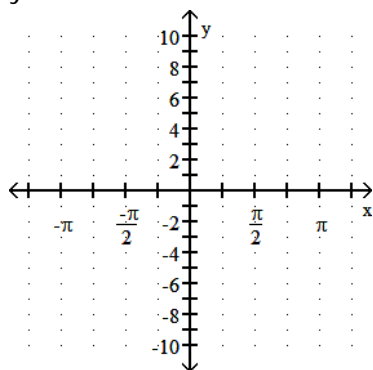
Describe the graph of the function in terms of a basic trigonometric function. Locate the vertical asymptotes and graph two periods of the function.

3) $y = \tan 2x$

3) _____

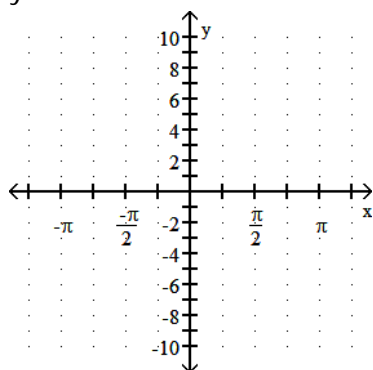


4) $y = \sec 3x$



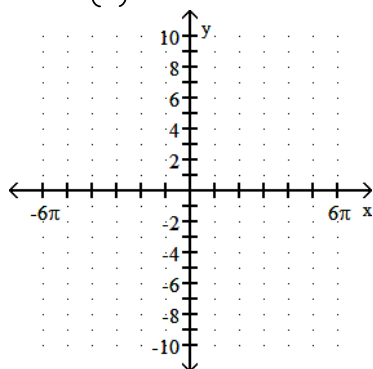
4) _____

5) $y = 2 \cot 2x$



5) _____

6) $y = \csc \left(\frac{x}{2} \right)$



6) _____

Analyze the function for domain, range, symmetry, and asymptotes.

7) $f(x) = \cot x$

7) _____

8) $f(x) = \csc x$

8) _____

Describe the transformation required to obtain the graph of the given function from the basic trigonometric graph.

9) $y = 3 \tan x$

9) _____

10) $y = 3 \csc x$

10) _____

11) $y = -3 \cot (x/2)$

11) _____

12) $y = -\tan \frac{\pi}{2}x + 2$

12) _____

Solve for x in the given interval. You should be able to find these numbers without a calculator, using reference triangles in the proper quadrants.

13) $\sec x = 2, \quad 0 \leq x \leq \frac{\pi}{2}$

13) _____

14) $\cot x = -\sqrt{3}, \quad \pi/2 \leq x \leq \pi$

14) _____

15) $\csc x = 1, \quad 2\pi \leq x \leq \frac{5\pi}{2}$

15) _____

Use a calculator to solve for x in the given interval

16) $\tan \theta = 1.3, \quad 0^\circ \leq \theta \leq 90^\circ$

16) _____

17) $\cot \theta = -0.6, \quad 270^\circ \leq \theta \leq 360^\circ$

17) _____

18) $\csc \theta = 2, \quad 0^\circ \leq \theta \leq 360^\circ$

18) _____